

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): An opening-force-maximizing device of an underpressure-activated valve structured for connection to a drinking container—(2) having an outlet opening—(4), said device comprising:

a partition wall provided with a wall opening and structured to be able to cover and pressure-sealingly enclose the outlet opening in the drinking container;

a peripherally continuous membrane positioned at an outside of the partition wall and subjected to ambient pressure, the membrane being arranged about a valve axis through the wall opening in the partition wall, the valve axis defining the axial direction of the underpressure-activated valve; and

an axially movable valve sealing member connected to the membrane and provided with a valve head positioned upstream of the wall opening for the opening and closing thereof;

- wherein an upstream side of the partition wall is provided with a valve seat formed around the wall opening for pressure-sealing and valve-closing contact with said valve head when the membrane is in an inactive position;

- wherein the membrane has an axial extent so as to form a sleeve-like body having two axial termination ends represented by an attachment end and a maneuvering end;

- wherein the attachment end is fixedly connected to the partition wall at a peripheral rim thereof;

- wherein the movable maneuvering end is positioned at an axial distance from the attachment end and is connected in a tensile-force-transmitting manner to the valve sealing member;

- wherein one side of the membrane is structured for receiving an underpressure which, together with said ambient pressure, creates a differential pressure across the membranethe container (2) being pressure balanced against an ambient pressure (P1)

~~when in position of use, in which position the device is connected to the container (2) and includes a partition wall (6, 106, 206) covering and pressure-sealingly enclosing the outlet opening (4) and being provided with a wall opening (8, 108, 208), the upstream side of which is in pressure-sealing contact with an axially movable valve-sealing member (22, 122, 222) being in position of rest, and the device also including a peripherally continuous membrane (12, 112, 212) being pressure-balanced against the ambient pressure (P1) and being arranged to the container (2) and about a valve axis (14) onto the partition wall (6, 106, 206) and through the wall opening (8, 108, 208), and the membrane (12, 112, 212) having an axial extent, thereby forming a sleeve-like body, whereby the membrane (12, 112, 212) consists of an attachment end (12a, 112a, 212a) fixedly connected to the partition wall (6, 106, 206), and a movable manoeuvring end (12b, 112b, 212b) placed at an axial distance from the attachment end (12a, 112a, 212a), and the manoeuvring end (12b, 112b, 212b) being arranged in a tensile-force-transmitting manner to said axially movable sealing member (22, 122, 222);~~

~~- wherein the sleeve-like membrane (12, 112, 212), when in its inactive position, is being arranged with a maximum axial longitudinal extent when at rest in its inactive position, and that;~~

~~- wherein the membrane (12, 112, 212) is radially flexible and therefore able to deflect in a radial direction relative to said valve axis deflectable; and also~~

~~- wherein the membrane is arranged in a manner inhibiting axial stretching causing it to be, whereby the membrane (12, 112, 212) is insignificantly extendable axially in said axial direction its longitudinal extent when subjected to said differential pressure, which generates a tensile force in the membrane causing the membrane to contract axially and assume an active position, thereby causing a valve-opening, axial movement of the valve sealing member tensile loads caused by a differential pressure force acting on the membrane (12, 112, 212).~~

Claim 2 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the ~~manoeuvring~~maneuvering end ~~(12b, 112b, 212b)~~ is connected to a separate valve~~the sealing member (22, 122, 222)~~.

Claim 3 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the valve sealing member forms an extension of the maneuvering end~~an extension of the manoeuvring end (12b, 112b, 212b)~~ is formed as the sealing member ~~(22, 122, 222)~~.

Claim 4 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the membrane ~~(12, 112, 212)~~ is of a cylindrical shape.

Claim 5 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the membrane ~~(12, 112)~~ is of a conical shape.

Claim 6 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the membrane ~~(212)~~ is provided with a cylindrical membrane portion proximate its attachment end and a conical membrane portion proximate its maneuvering end~~of a partly cylindrical and partly conical shape~~.

Claim 7 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the membrane ~~(12)~~ is radially deflectable outwards from the valve axis ~~(14)~~.

Claim 8 (currently amended): The device according to claim 7, ~~characterized in that~~wherein a mid portion of the membrane ~~(12)~~ is shaped as an axially extending longitudinal bellows having axially extending folds ~~(36)~~.

Claim 9 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the membrane ~~(112, 212)~~ is radially deflectable inwards towards the valve axis ~~(14)~~.

Claim 10 (currently amended): The device according to claim 9, ~~characterized in that~~wherein the membrane ~~(212)~~ is provided with at least one or more peripheral bracing rings ~~ring disposed (264) spaced apart~~ between the attachment end ~~(212a)~~ and the ~~manoeuvring~~maneuvering end ~~(212b)~~ of the membrane ~~(212)~~, whereby the membrane ~~(212)~~, upon activation, assumes a ~~desired~~ deflection profile determined by the at least one bracing ring upon activation.

Claim 11 (currently amended): The device according to claim 9, ~~characterized in that~~wherein the membrane ~~(112, 212)~~ is arranged with ~~one or more~~ buckle locators in the form of axially extending corrugations or folds capable of yielding a certain resistance to radial deflection~~that localize desired deflection regions~~ of the membrane ~~(112, 212)~~, whereby the membrane ~~(112, 212)~~, upon activation, assumes a ~~desired~~ deflection profile determined by the axial corrugations or folds upon activation.

Claim 12 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the membrane ~~(12, 112, 212)~~ is braced axially for it to yield a certain resistance to radial deflection, whereby the membrane ~~(12, 112, 212)~~, when inactive, exerts a firm closing force on the valve sealing member ~~(22, 122, 222)~~ ~~when the membrane (12, 112, 212) is at rest in its inactive position~~.

Claim 13 (currently amended): The device according to claim 12, ~~characterized in that~~wherein the membrane ~~(12, 112, 212)~~ is provided with one or more axial braces.

Claim 14 (currently amended): The device according to claim 12, ~~characterized in that~~wherein the membrane-(12, 112, 212), when viewed in cross-section, is arranged into a hexagonal shape, star shape or wave shape, which has an axially bracing effect.

Claim 15 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the membrane-(12, 112, 212) is formed asymmetrically about the valve axis (14).

Claim 16 (cancelled)

Claim 17 (currently amended): The device according to claim 1, ~~characterized in that~~wherein the valve sealing member-(22, 122, 222) and an edge of the wall opening-(8, 108, 208) are connected via a breakable seal capable of being~~that is~~ broken upon first-time movement of the sealing member-(22, 122, 222).

Claim 18 (currently amended): The device according to claim 10, ~~characterized in that~~wherein the membrane-(112, 212) is arranged with ~~one or more~~ buckle locators in the form of axially extending corrugations or folds capable of yielding a certain resistance to radical deflection~~that localize desired deflection regions~~ of the membrane-(112, 212), whereby the membrane-(112, 212), upon activation, assumes a ~~desired~~ deflection profile determined by the axial corrugations or folds~~upon activation~~.

Claim 19 (currently amended): The device according to claim 7, ~~characterized in that~~wherein the membrane-(12, 112, 212) is braced axially for it to yield a certain resistance to radial deflection, whereby the membrane-(12, 112, 212), when inactive, exerts a firm closing force on the valve sealing member-(22, 122, 222) ~~when the membrane (12, 112, 212) is at rest in its inactive position~~.

Application No. 10/533,257
Amendment Dated June 29, 2009
Reply to Office Action of April 1, 2009

Claim 20 (currently amended): The device according to claim 9, ~~characterized in that~~wherein the membrane ~~(12, 112, 212)~~ is braced axially for it to yield a certain resistance to radial deflection, whereby the membrane ~~(12, 112, 212)~~, when inactive, exerts a firm closing force on the valve sealing member ~~(22, 122, 222)~~ ~~when the membrane (12, 112, 212) is at rest in its inactive position.~~